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FEDERAL - STATE COOPERATIVE

SNOW SURVEYS AND IRRIGATION WATER FORECASTS
for

Montana and Northern Wyoming
Upper Missouri, Upper Columbia and Yellowstone Rivers

By
Division of Irrigation, Soil Conservation Service
United States Department of Agriculture
and
Montana Agricultural Experiment Station

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FEDERAL-STATE COOPERATIVE SNOW SURVEYS

AND

IRRIGATION WATER FORECASTS

FOR

MONTANA and NORTHERN WYOMING

Upper Missouri and Upper Columbia River Basins

Report Prepared
by

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Division of Irrigation
Soil Conservation Service

and

Montana Agricultural Experiment Station
Bozeman, Montana

IRRIGATION WATER SUPPLY OUTLOOK
FOR SEASON 1952
AS OF FEBRUARY 1

The general outlook for irrigation water supply for the 1952 season is GOOD on the Upper Missouri and Upper-Columbia River Basins. The Wind River Basin in Wyoming is a little short for this time of year. The snow pack at most stations measured on February 1 is above average and equal to, or greater than last year. Should snow accumulations occur as they usually do during February and March, there will be little question of having an EXCELLENT irrigation water supply this season. If the February-March accumulation is above average, the Columbia River Basin will experience another potential flood hazard. The snow pack is greater now than in 1948.

The amount of irrigation water in storage reservoirs throughout the state is very satisfactory for this time of year. There are no serious shortages. With the apparent ample storage in the snow pack, all reservoirs should fill before the irrigation season starts.

On the Jefferson River Basin, only a few adjacent courses are measured on February 1. However, general information would indicate that a GOOD water supply is in storage in the snow pack over this basin. Precipitation has been above average since the first of October.

On the Madison River Basin, the three courses at Hebgen, West Yellowstone and 21-Mile indicate that the snow pack is well above average--about 195% of the usual water content for February 1.

The Gallatin River Basin is likewise above average. Snow survey measurements on this basin show 165% average for February 1, and about equal to the average condition to be expected on April 1.

The snow survey courses along the Main Stem of the Missouri River are not quite as high in water content as the head water courses, but are still above average conditions. The snow survey course at Marias Pass indicates 147% average for February 1 water content.

The Upper Yellowstone River Basin from Yellowstone Park on East has recovered some since the first of January. The snow surveys made by the Park Service indicate an above average condition at this time.

The Lower Yellowstone River tributaries from Wyoming do not have an above average condition. The Wind River, in particular, and Owl Creek are both exceedingly short of water content by comparison with past years records. The Owl Creek courses are only four years old, while some of the Wind River courses extend back twelve years. There is plenty of time for this basin to recover during February and March and offset the present deficiency.

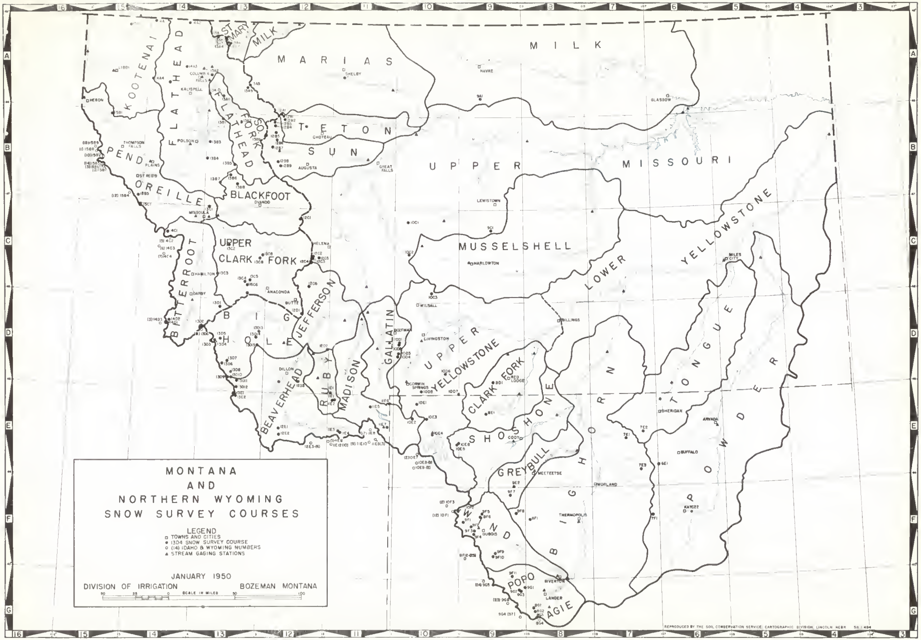
The snow survey measurements over the Upper Columbia River Basin are somewhat spotted in their values of above average condition, although in general, the entire basin is above average. Snow courses measured in Canada on the Kootenai River Basin are generally about 125% average for February 1.

February 1 snow survey measurements on the Flathead River Basin indicate an above average snow pack over the several tributaries. Most measurements are greater than those for the past five years and many of them are equal to, or are above the usual April 1 water content figures.

The snow pack over the Clark Fork River Basin is not quite as heavy as farther north, but still a good water supply is anticipated from this basin.

U S DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
H H Bennett Chief

DIVISION OF RESEARCH
M L Nichols, Chief
Washington, D C



MONTANA
AND
NORTHERN WYOMING
SNOW SURVEY COURSES

LEGEND
□ TOWNS AND CITIES
● 1304 SNOW SURVEY COURSE
○ (14) IDAHO & WYOMING NUMBERS
▲ STREAM GAGING STATIONS

JANUARY 1950
DIVISION OF IRRIGATION BOZEMAN MONTANA

REPRODUCED BY THE SOIL CONSERVATION SERVICE CARTOGRAPHIC DIVISION LINCOLN NEBR 5R 1 484

INDEX TO MONTANA & NORTHERN WYOMING SNOW COURSES

MISSOURI RIVER DRAINAGE

Drainage Basin and Course Name	Montana Number	Elev.	Location			Record Began	Measuring Dates[a]	Measured By:[b]
			Sec. Lat.	Twp.	Range Long.			
JEFFERSON RIVER								
(RED ROCK-BEAVERHEAD)								
Lakeview Ridge	11E3	7400	27	14S	2W	19[illegible]	[illegible],4,5	9
Lakeview Canyon	11E4	6[illegible]	26	14[illegible]	2[illegible]	1948	[illegible],4,5	9
Limekiln	12E2	6950	5	[illegible]5S	9W	1948	[illegible],4	1
White Pine Ridge	12E1	8850	18	14S	9W	1948	[illegible],4	1
(HORSE PRAIRIE)								
Bloody Dick	13D16	7600	12	8S	16W	1948	[illegible],4	1
[illegible]tone	13D9	8100	11	8S	16W	1948	[illegible],4	1
Lemhi Pass	13E1	7480	9	10S	15W	1948	3,4	1
Terrell Creek	13D12	6650	14	9S	15W	1948	3,4	1
Trail Creek	13E2	7090	15	1[illegible]	15W	1948	3,4	1
Selway Junction	13D1[illegible]	6800	27	8S	15W	1948	3,4	1
(BIG HOLE)								
Big Hole Pass	1[illegible]	7440	28	3S	18W	1948	3,4	1
Big Hole Pass (Below)	13D4	6900	24	3S	18W	1948	3,4	1
East Boundary	13D5	6700	22	3S	17W	1948	3,4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	2,3,4,5	[illegible],2
[illegible]ahrke Creed	13D8	734[illegible]	25	[illegible]S	16W	1948	3,4	1
Miner Forks	13D6	7300	[illegible]	[illegible]	17W	1948	3,4	1
Miner Lake	13D7	6720	10	6S	16W	1945	[illegible],4,5	1
(WISE RIVER)								
Anderson Mdw.	13D14	7000	18	3S	12W	1948	3,4	1
Elk Horn	13D15	8450	15	4S	12W	1934	3,4,5	2
Wise River	13D13	6300	1[illegible]	2S	12W	1948	3,4	1
(RUBY RIVER)								
Cottonwood	11[illegible]	5900	24	10S	3W	1948	3,4	1
Cottonwood (Upper)	11E1	840[illegible]	30	1[illegible]S	2W	1948	3,4	1
Flashlight	11D3	[illegible]950	22	8S	7W	1945	3,4,5	1
Tobacco Root	11D2	[illegible]	13	4S	3W	1948	3,4	1
Vigilante	11D1	6125	28	9S	3W	1948	3,4	1
MADISON RIVER								
Hebgen	11E[illegible]	[illegible]550	22	11S	3[illegible]	1934	1,2,3,4,5	2
West Yellowstone	11E[illegible]	6700	34	13S	5E	1934	1,2,3,4,5	2
Norris Basin	10E[illegible]	7500	44°-44'		110°-42'	1935	3,4	5,6
GALLATIN RIVER								
Devil's Slide	10D4	8100	14	5S	6[illegible]	1935	3,4,5	2,6
[illegible] Meadow	10D3	6600	22	4S	6E	1934	3,4,5	2,6
Mystic Lake	10D2	6600	30	3S	7E	1935	2,3,4	6,7
New World	10D1	6700	24	3S	6E	1939	2,3,4,5	6,7
21-Mile	11E6	[illegible]50	1	11S	5E	1934	1,2,3,4,5	2
MISSOURI RIVER MAIN STEM								
Chessman Reservoir	12C5	6200	2	8N	5W	1936	1,2,3,4,5	2
Crystal Lake	9C1	6100	24	12N	17E	1941	3,4	1
Grasshopper	10C2	7[illegible]	19	9N	8E	1938	3,4	1
Kings Hill	10C1	79[illegible]	35	13N	7E	1937	3,4,5	2
Picnic Grounds	12C6	6500	22	5N	6W	1940	2,3,4	3
Pipestone Pass	12D1	72[illegible]	11	1N	7W	1938	2,3,4,5	1
Stemple Pass	12C1	[illegible]900	16	13N	7W	1934	[illegible],4,5	2
Ten Mile Creek, Lower	12C2	[illegible]	1[illegible]	8N	6W	1935	1,2,3,4,5	2
Ten Mile Creek, Middle	12C3	6800	13	8N	6W	1934	1,2,3,4,5	2
Ten Mile Creek, Upper	12C4	8000	19	8N	5W	1935	1,2,3,4,5	2
([illegible])								
Freight Creek	12A1	[illegible]	[illegible]	2[illegible]N	10W	1948	[illegible],4	1
Wal[illegible] Creek	12A2	[illegible]	16	2[illegible]N	9W	1948	[illegible],4	[illegible]
West Fork	12B1	6000	[illegible]	25N	9W	1948	3,4	1
(SUN RIVER)								
Bench Mark	12B8	55[illegible]	[illegible]	20N	10W	1948	3,4	[illegible]
Cabin Creek	12B6	5400	33	23N	10W	1949	3,4	1
5-Bull	12B9	5600	36	2[illegible]N	10W	1948	3,4	1
Gates Park	12B5	5300	31	24N	10W	1949	3,4	1
Goat Mountain	12B7	7000	20	22N	10W	1934	3,4	2
My Lake	13B9	7300	21	23N	12W	1950	3,4	1
Wrong Creek Ridge	12B3	6800	17	25N	10W	1949	3,4	1
Wrong Creek	12B4	5700	32	25N	10W	1949	3.4	1
(MARIAS RIVER)								
Marias Pass	13A5	5250	34	30N	14W	1936	1,2,3,4,5	2
Snow Lab. #16	13A9	5200	15	29N	14W	1947	1,2,3,4,5	2
(MILK RIVER)								
Rocky Boy	9A1	5200	15	28N	16E	1941	3,4	7
(MUSSELSHELL RIVER)								
Grasshopper	10C3	7000	19	9N	8E	1938	3,4	1
(UPPER YELLOWSTONE)								
Camp Senia	9D1	7890	2	8S	18E	19[illegible]	4	1
Canyon	10E3	7750	44°-44'		110°-30'	1938	1,2,3,4,5	12
Cooke City	10D7	7400	25	9S	14E	1937	1,2,3,4,5	5
Crevice Mt.	10D5	8400	29	9S	9E	1935	3,4	1
Independence	10D6	8000	22	7S	12[illegible]	1941	3,4	12
Lake Camp	10E4	[illegible]850	44°-34'		110°-24'	1937	1,2,3,4,5	12
Lupine Creek	10E1	7300	44°-54'		110°-37'	1938	1,2,3,4,5	5
(SHIELDS RIVER)								
Porcupine	10C3	6500	10	4N	10E	1938	3,4	1
LOWER YELLOWSTONE								
([illegible] River) Wyoming								
Brooks Lake #3	10F2	9200	23	44N	110W	1939	2,3,4,5	12
Burroughs Creek	9F6	8800	15	43N	107W	1948	2,3,4,5	12
Dinwoodie	9F10	10000	9	38N	105W	1948	2,3,4,5	12
Dry Creek	9F9	9500	34	4N	105W	1948	2,3,4,5	12
DuNoir	9F2	8750	27	42N	108W	1940	2,3,4,5	12
Geyser Creek	9F3	8500	12	41N	108W	1948	2,3,4,5	12
Hobbs Park	9G2	10000	22	2S	3W	1948	2,3,4,5	12
Little Warm	9F4	9500	24	41N	108W	1948	2,3,4,5	12
Mosquito Park R.S.	9G3	9500	23	2S	3W	1940	2,3,4,5	12
Sheridan R.S.	9F1	7500	3	42N	109W	1939	2,3,4,5	12
St. Lawrence R.S.	9F11	9000	26	1N	4W	1940	2,3,4,5	12
T-Cross Ranch	9F5	8000	1	43N	107W	1940	2,3,4,5	12
Trout Creek	9G1	8400	5	2S	2W	1948	2,3,4,5	12
Togwotee Pass	10F1	9600	29	44N	110W	1936	2,3,4,5	10
(Popo Agie River) Wyoming								
Blue Ridge	8G2	9500	23	31N	101W	1939	2,3,4,5	12
Grannier Meadows	8G4	9000	19	30N	100W	1936	2,3,4,5	12
Larsen Creek	9G4	9000	12	30N	103W	1948	3,4,5	12
Sawmill Glade	8G1	8500	3	31N	101W	1939	2,3,4,5	12
South Pass	8G3	9000	13	30N	101W	1939	2,3,4,5	12

MISSOURI RIVER DRAINAGE CONT.

Drainage Basin and Course Name	Montana Number	Elev.	Location			Record Began	Measuring Dates[a]	Measured By:[b]
			Sec. Lat.	Twp.	Range Long.			
BIG HORN RIVER Wyoming								
Beavers Mill	9F8	8900	6	43N	102W	1948	2,3,4,5	12
Owl Creek	8F1	87[illegible]	36	43N	101W	1948	2,3,4,5	12
Tensleep R.S.	7E3	8300	30	49N	86W	1935	4,5	1
Timber Creek	9E2	8800	25	47N	103W	1948	4,5	12
Ranger Creek	7E1	8800	32	53N	88W	1935	4,5	1
Wood River	9F7	8000	28	46N	103W	1939	2,3,4,5	12
(SHOSHONE RIVER Wyoming								
East Entrance	10E6	7000	17	52N	109W	1948	1,2,3,4,5	5
Sylvan Pass	10E5	71[illegible]	12	52N	110W	1936	1,2,3,4,5	5
TONGUE RIVER Wyoming								
Big Goose	7E2	7700	4	53N	86W	1935	2,3,4,5	1
Burgess Ranger Sta.	7E4	[illegible]900	36	56N	89W	1950	2,3,4,5	12
Dome Lake	7E5	8800	11	53N	87W	1950	2,3,4,5	12
Lodgepole	9E1	8[illegible]	32	56N	106W	1940	4,5	1
POWDER RIVER								
North Powder	7E8	8500	5	47N	85W	1951	2,3,4,5	12
Muddy Pass	[illegible]E7	9700	11	48N	85W	1950	2,3,4,5	1
Soldier Park	7E6	8700	36	51N	85W	1950	2,3,4,5	12
Sour Dough	6E1	8500	17	49N	84W	1936	2,3,4,5	1
Red Fork	7E1	7000	18	43N	85W	1936	2,3,4,5	12

COLUMBIA RIVER BASIN

Drainage Basin and Course Name	Montana Number	Elev.	Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates[a]	Measured By:[b]
KOOTENAI RIVER								
Baree Mountain	15B1	6000	1	25N	31W	1937	4,5	1
Blue Bird Basin	14A1	6800	24	37N	26W	1937	4,5	1
Red Mountain	15A1	6000	4	36N	29W	1937	3,4,5	1
FLATHEAD RIVER								
Basin Creek	13B14	5000	11	19N	12W	1951	2,3,4,5	1
Big Creek	13B3	6750	6&7	22N	18W	1941	3,4,5	4
Brush Creek	14A4	5000	13	30W	26W	1937	3,4,5	1
Cattle Queen	13A1	4700	7	35N	17W	1939	3,4,5	5
Desert Mountain	13A2	5600	24	31N	19W	1937	1,2,3,4,5	1
HellRoaring Divide	14A3	5770	35	32N	22W	1942	3,4,5	1
Hulbrook	13B13	4530	18	21N	13W	1951	2,3,4,5	1
Kishenehn	14A2	4300	7	37N	21W	1946	4,5	5
Limestone Pass	13B8	7000	28	18N	12W	1948	3,4,5	1
Logan Creek	14A5	4300	34	30N	24W	1937	3,4,5	1
Marias Pass	13A5	5250	340	30N	14W	1934	1,2,3,4,5	2
Snow Lab. #16	13A9	52[illegible]	15	29N	14W	1946	1,2,3,4,5	2
Spotted Bear Mt.	13B2	7000	23	25N	15W	1948	3,4,5	1
Strawberry Lake	13B10	6500	11	28N	19W	1948	3,4,5	1
Trinkus Lake	13B1	6500	9	25N	17W	1948	3,4,5	1
Trout Lake #2	13B12	3600	21	28N	17W	1948	3,4,5	1
Upper Holland Lake	13B5	7000	28	20N	16W	1948	3,4,5	1
Twin Creeks	13B11	3580	14	[illegible]6N	16W	1951	2,3,4,5	1
Quintonkon	13B13	38[illegible]	11	26N	17W	1951	2,3,4,5	1
UPPER CLARK FORK								
El Dorado Mine	13C9	7800	23	8N	12W	1946	4	11
Gold Creek Lake	13C8	[illegible]	14	8N	12W	1946	4	11
Intergaard	13C4	6450	6	5N	13W	1939	2,3,4	3
North Fork Jocko	13B7	6330	3	17W	17W	1941	3,4,5	4
Picnic Grounds	12C6	6500	22	5N	6W	1940	2,3,4	3
Pipestone Pass	12D1	7200	11	1N	7W	1938	2,3,4,5	1
Rainy Lake	13B6	4300	11	18N	16W	1947	3,4,5	1
Slide Rock Mountain	13C2	7100	26	10N	16W	1937	4	1
Southern Cross	13C5	6500	9	5N	13W	1939	2,3,4	3
Stemple Pass	13C1	6900	16	13N	7W	1934	3,4,5	2
Storm Lake No. 2	12C7	7780	19	4N	13W	1939	4	1
Stuart Mill	13C6	6500	19	5N	13W	1939	2,3,4	3
Stuart Mountain #1	13C1	7400	6	14N	18W	1936	4	1
Coyote Hill	13B10	4200	12	18N	16W	1951	3,4,5	1
PEND OREILLE RIVER								
Baree Mountain	13B1	6000	1	25N	31W	1937	4,5	1
Freezeout Submit #2	15C10	6800	21	15N	27W	1951	4	1
Hoodoo Creek	13C1	6200	9&16	14N	27W	1937	4	1
BITTERROOT RIVER								
East Fork Ranger Stn.	13D1	5400	10	2N	17W	1937	4	1
Gibbons Pass	13D2	7100	4	2S	19W	1934	2,3,4,5	1
Mud Creek Pasture	14C1	4600	24	11N	24W	1937	3	1
Nesperce Camp	14D2	5580	19&20	1S	23W	1937	4	1
Nesperce Pass	14D1	6575	32	28N	16E	1937	4	1
Skalkaho Summit	13C3	7259	30	6N	17W	1937	4	1

SASKATCHEWAN RIVER BASIN

Drainage Basin and Course Name	Montana Number	Elev.	Sec. Lat.	Twp.	Range Long.	Record Began	Measuring Dates[a]	Measured By:[b]
ST. MARY RIVER								
Iceberg Lake	13A3	6000	48°-50'		113°-42'	1922	5	2,8
Piegan Pass #4	13A4	5000	48°-46'		113°-40'	1922	5	2,8
Piegan Pass #6	13A6	6500	48°-45'		113°-42'	1922	5	2,8
Mount Allen #7	13A7	7000	48°-44'		113°-40'	1922	5	2,8
Ptarmigan #8	13A8	5800	48°-50'		113°-42'	1922	5	2,8

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a. Numerals 1,2,3,4, and 5 refer to January 1, February 1, March 1, April 1, and May 1

b. Numerals refer to Agency that secures the snow survey as follows:

1. U.S. Forest Service
2. U.S. Geological Survey and U.S. Engineer Corps
3. Montana Power Company
4. U.S. Indian Service
5. National Park Service
6. Montana Experiment Station
7. City of Bozeman
8. Dominion Water and Power Bureau
9. U.S. Fish and Wildlife Service
10. U.S. Bureau of Reclamation
11. Deerlodge Citizens Committee
12. Soil Conservation Service

5,R-11,464-A

STORAGE IN RESERVOIRS OF MONTANA, FEBRUARY 1, 1952

MISSOURI RIVER BASIN

Reservoir Volumes in 10,000's of acre feet

RESERVOIR	Location on or Diversion from	Usable Capacity	Contents This Year Feb. 1 1952	Contents Last Year Feb. 1 1951	Feb. 1 10-Year Average 1941-1950
Lake Sewall	Missouri	37.8	19.2	23.6	28.6
Hauser Lake	Missouri	62.5	36.7	46.5	48.1
Ft. Peck Res.	Missouri	19,000.0	11,590.0	12,140.0	9,079.0
Ruby Res.	Ruby	38.8	--	--	--
Willow Lake Res.	Willow Cr.	17.8	--	--	9.7
Hebgen Lake	Madison River	345.0	290.8	239.2	249.6
Ennis Lake	Madison River	41.0	38.9	30.8	35.4
Gibson Res.	N. Fk. Sun River	105.0	68.6	75.4	55.1
Willow Creek	N. Fk. Sun-Willow Cr.	32.3	23.1	23.1	14.5
Pishkun Res.	N. Fk. Sun River	32.0	23.6	19.0	18.0
Lower Two Medicine L.	Two Medicine River	14.0	0.	--	0.
Four Horns Res.	Badger Creek	20.0	8.6	--	7.8
Swift Reservoir	Birch Creek	30.0	20.9	24.9	20.2
Lake Francis Res.	Birch Creek	112.0	93.4	93.8	80.5
Ackley Lake	Judith River	5.8	--	4.9	4.3
Durand Res.	N. Fk. Musselshell	7.0	--	5.4	4.8
Dead Man Basin	Musselshell River	52.5	--	--	48.1
Martinsdale Res.	So. Fk. Musselshell	23.1	--	12.8	10.2
Fresno Res.	Milk River	127.2	83.3	68.6	45.6
Nelson Res.	Milk River	66.8	--	16.1	30.2
Mystic Lake	W. Rosebud Creek	20.8	10.4	11.9	11.8
Cooney Res.	Red Lodge Creek	27.5	8.6	10.7	8.0
Tongue Res.	Tongue River	73.9	--	8.2	7.8
Sherburne Lake Res.	Swiftcurrent Creek	66.1	17,020.0	23.3	20.6

YELLOWSTONE RIVER BASIN (Wyoming)

Buffalo Bill	Shoshone	456.6	266.4	305.9	285.4
Boysen Res.	Wind River	819.8	92.4	--	--
Pilot Butte	Wind River	30.1	6.5	5.9	13.5
Bull Lake	Wind River	155.0	74.7	99.4	61.2

COLUMBIA RIVER BASIN

Georgetown Lake	Flint Creek	31.0	24.6	25.2	23.7
E. Fk. Rock Cr. Res.	E. Fk. Rock Creek	16.0	--	--	--
Nevada Creek Res.	Nevada Creek	12.6	--	--	5.7
W. Fk. Bitterroot Res.	W. Fk. Bitterroot	31.7	--	10.0	6.5
Como Lake	Rock Creek	34.8	11.0	22.5	11.8
Hungry Horse Res.	So. Fk. Flathead	3,000.0	59.2	--	--
Lower Jocko Lake	Jocko Cr.	7.6	0.10	--	--
Flathead Lake(Sommers)	Flathead River	1,791.0	1,182.0	1,107.0	928.6
Little Bitterroot	Little Bitterroot*	37.1	35.7	33.3	11.1
Dry Fk. Res.	Dry Fork Creek*	6.7	4.1	39.6	3.4
Mission Valley Res.	Mission Valley(Flathead)	98.6	43.8	44.1	30.3

*Comprise two reservoirs on Dry Creek

*Comprise two reservoirs on Little Bitterroot River

**Comprise eight small reservoirs on Mission Valley Project Indian Reclamation Service.

PRECIPITATION DATA FOR FEBRUARY 1, 1952
MONTANA

Station	Elevation	1951 Precipitation				1952	Accumulated Precipitation		
		Oct.	Nov.	Dec.	Jan.	Dept. From Normal *	1951-52	Normal	Departure *
WEST OF DIVIDE									
Butte (Airport)	5533	0.96	.40	1.18	.29	-.11	2.83	2.05	.78
Phillipsburg	5280	.63	.66	2.12	.26	-.53	3.67	3.28	.39
Hamilton	3529	1.14	.77	1.41	.31	-.48	3.63	3.22	.41
West Glacier	3154	4.92	2.25	4.25	2.51	-.42	13.93	11.32	2.61
Summit (Marias)	5213	6.20	3.20	4.65	4.35	.93	18.40	11.69	6.71
Ovando 1 SW	4101	1.57	1.37	2.08	.71	-.89	5.73	6.10	- .37
Trout Creek	2485	6.50	3.11	4.74	3.81	.12	18.16	13.87	4.29
Thompson Falls	2435	3.29	2.16	1.89	.82	-1.19	8.16	8.25	- .09
Average (8)		3.15	1.74	2.79	1.63	- .27	9.33	7.27	2.06
CENTRAL DIVISION									
Babb	4300	2.91	.24	1.49	.25	- .69	4.89	4.05	.84
Havre	2488	1.00	.25	1.02	--	--	--	2.62	--
Great Falls (Airport)	3664	1.72	.41	1.06	.34	- .22	3.53	2.08	1.45
Helena (Airport)	3893	.79	.31	1.08	.15	- .58	2.33	2.09	.24
Lewistown (Airport)	4132	1.68	.67	1.50	.39	- .34	4.24	1.50	2.74
Livingston	4485	3.74	.48	1.05	1.08	.54	6.00	3.11	2.89
Wisdom	6058	1.74	.57	1.50	.19	- .61	3.73	3.22	.51
West Yellowstone	6669	3.66	1.66	3.83	3.34	.53	12.49	8.04	4.45
Mystic Lake	6558	3.58	.75	1.66	1.22	- .08	7.21	5.60	1.61
Average (9)		2.21	.59	1.53	.85	- .13	5.56	3.67	1.89
EASTERN DIVISION									
Malta	2255	.92	.03	.46	.41	- .06	1.82	2.07	- .25
Ft. Peck	2180	.53	.27	.55	--	--	--	1.88	--
Medicine Lake	1962	.49	.07	.27	.22	- .09	1.05	1.67	- .62
Circle	2428	.73	.22	--	--	--	--	2.84	--
Billings #2	3139	.86	.16	.55	.19	- .44	1.67	3.18	-1.55
Miles City	2392	.69	.46	1.14	.42	- .24	2.71	2.76	- .05
Glendive	2076	.63	.38	.60	.25	- .27	1.86	2.31	- .63
Broadus	3026	1.78	.64	.79	.14	- .36	3.35	2.63	.72
Average (8)		.83	.28	.62	.27	- .25	2.08	2.42	- .34

*Note: Figures without a minus sign (-) are plus

PRECIPITATION DATA FOR FEBRUARY 1, 1952
NORTHERN WYOMING

Station	Elevation	1951 Precipitation Oct.	Nov.	Dec.	Jan.	1952 Dept. From Normal *	Accumulated Precipitation 1951-52	Normal	Departure *
BIG HORN RIVER BASIN									
Cody	4984	1.14	0.39	0.30	0.30	0.03	2.13	1.81	.32
Lovell	3825	1.09	0.12	0.39	0.22	-0.20	1.82	1.57	.25
Worland	4061	0.31	0.09	0.10	0.41	0.06	1.13	1.67	-.54
Sunshine 4 SW	6930	1.82	0.16	0.18	--	--	--	3.35	--
Thermopolis	4336	0.93	0.28	0.29	0.13	-0.26	1.63	2.54	-.91
Riverton	4954	0.67	0.09	0.25	0.05	-0.12	1.06	2.01	-.95
Dubois	6917	0.24	0.12	0.53	0.35	-0.12	1.24	2.00	-.76
Average		0.89	0.18	0.29	0.24	-0.13	1.50	2.49	-.99
TONGUE RIVER BASIN									
Sheridan	4021	1.37	0.15	0.68	0.15	-0.70	2.35	3.19	-.84
POWDER RIVER BASIN									
Arvada	3680	0.58	0.18	0.45	0.05	-0.40	1.26	2.43	-1.17
Metz Ranch	5280	0.95	0.11	0.19	0.12	-0.36	1.37	2.20	-.83
Gillette	4542	1.06	0.50	0.40	0.40	-0.28	2.36	2.93	-.57
Nine Mile Creek	5000	0.49	0.35	0.18	--	--	--	2.03	--
Mid West	4850	0.41	0.16	0.78	0.03	-0.51	1.38	2.83	-1.45
Average		0.70	0.26	0.40	0.15	-0.34	1.59	3.10	-1.51

* Note: Figures without a minus sign (-) are plus

MONTANA SNOW SURVEYS FEBRUARY 1, 1952

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches)								Years
					Feb. 1	Past Records			Average Data February 1		Average on April 1		
					1952	1951	1950	1949	Avg.	%Avg.	Avg.	%Avg.	
JEFFERSON													
*Kilgore	11E12	6200	Feb.30	43	12.1	4.7	9.0	6.8	6.9	175	10.7	113	16
*Camp Creek	12E3	6800	Feb.27	54	15.5	4.5	9.6	5.7	5.7	270	7.9	195	17
MADISON RIVER													
Hebgen	11E5	6550	Jan.31	49	14.0	5.4	7.7	11.1	8.0	175	12.1	116	18
West Yellowstone	11E7	6700	Jan.31	49	13.9	8.0	9.9	9.7	7.3	190	11.2	124	15
21-Mile	11E6	7150	Jan.30	70	21.6	10.6	14.5	14.2	9.8	221	16.5	131	15
*Big Springs	11E9	6500	Jan.28	79	24.0	13.0	14.9	15.5	12.1	198	20.5	117	17
*Island Park	11E10	3600	Jan.29	68	19.7	9.1	12.8	11.6	9.5	207	15.4	128	17
*Valley View	11E8	6500	Jan.29	67	19.5	7.4	12.0	10.7	8.6	227	14.6	134	7
Norris Basin	11E2	7500	Feb. 7	42	10.5	6.2	--	--	--	--	--	--	-
GALLATIN RIVER													
Mystic Lake	10D2	6600	Feb. 2	30	7.6	5.2	2.8	6.6	5.1	149	7.5	101	15
New World	10D1	6700	Feb. 2	36	9.8	6.1	3.2	8.3	7.9	124	10.0	98	5
21-Mile	11E6	7150	Jan.30	70	21.6	10.6	14.5	14.3	9.8	221	16.5	131	15
MISSOURI RIVER MAIN STEM													
Chessman Reservoir	12C5	6200	Feb. 2	17	4.6	3.1	3.4	4.4	3.1	148	4.6	100	17
Tenmile, Lower	12C2	6250	Feb. 1	24	5.8	5.5	4.6	6.3	4.5	129	6.4	91	17
Tenmile, Middle	12C3	6800	Feb. 1	32	8.2	8.2	6.9	8.7	6.4	128	10.3	79	18
Tenmile, Upper	12C4	8000	Feb. 1	36	10.4	10.0	8.4	10.6	8.1	128	13.2	79	18
Pipestone Pass	12D1	7200	Feb. 4	22	13.1	3.0	1.4	5.2	2.9	107	5.7	55	13

*Adjacent Basin

MONTANA SNOW SURVEYS FEBRUARY 1, 1952

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches)								Years
					Feb. 1	Past Records			Average Data February 1		Average on April 1		
					1952	1951	1950	1949	Avg.	%Avg.	Avg.	%Avg.	
(Maria River)													
Marias Pass	12B5	5250	Jan.31	52	16.6	13.7	20.6	12.6	11.3	147	17.5	95	18
UPPER YELLOWSTONE													
Canyon	10E3	7750	Jan.31	53	10.6	8.7	11.6	10.2	9.4	113	16.5	64	7
Cooke City	10D7	7400	Feb. 1	31	7.2	5.2	4.3	6.7	5.4	133	7.6	95	
Lake Camp	10E4	7850	Jan.31	40	9.0	6.7	8.1	8.4	5.9	152	9.3	97	7
Lupine	10E1	7300	Feb. 1	44	11.7	6.4	7.4	8.6	6.6	178	9.8	112	11
*Lewis Lake Divide	10E9	7000	Feb. 1	112	37.0	32.3	35.2	39.8	34.3	108	40.4	92	10
*Astor Creek	10E8	7700	Feb. 1	97	28.9	24.5	16.9	19.2	18.9	153	33.3	87	10
Tom Thumb Summit	10E7	7900	Feb. 1	73	21.6	--	--	15.1	15.4	140	25.0	87	4
LOWER YELLOWSTONE (Wind River)													
Brooks Lake #3	10F2	9200	Jan.30	62	19.4	23.4	22.6	21.3	17.1	113	24.3	80	12
Burroughs Creek	9F6	8800	Jan.29	36.	8.7	19.0	15.3	9.8	14.7	59	20.1	43	4
Dinwoodie	9F10	10000	Feb. 1	37	10.1	11.9	13.4	9.2	11.5	88	18.1	56	4
Dry Creek	9F9	9500	Feb. 1	21	4.1	5.6	8.2	5.1	6.3	65	10.1	37	4
Du Noir	9F2	8750	Jan.30	24	5.8	8.0	10.7	5.8	6.8	85	10.5	55	11
Geyser Creek	9F3	8500	Jan.31	24	5.3	7.7	8.0	6.3	7.3	73	11.4	47	4
Hobbs Park	9G2	10000	Feb. 3	52	15.8	9.9	21.4	12.8	14.7	107	23.8	67	4
Little Warm	9F4	9500	Jan.31	46	12.4	19.3	18.9	--	16.9	73	24.5	51	3
Mosquito Park	9G3	9500	Feb. 3	27	4.7	4.7	10.2	6.3	7.0	67	9.1	52	9
Sheridan	9F1	7500	Jan.30	25	6.0	8.4	7.0	6.6	5.7	105	7.2	83	11
St. Lawrence	9F11	9000	Jan.27	24	5.4	3.1	7.9	6.6	5.0	108	8.0	68	9
T-Cross Ranch	9F5	8000	Jan.29	19	3.4	8.0	5.6	5.8	5.2	65	6.2	55	12
Trout Creek	9G1	8400	Feb. 3	17	3.2	1.2	5.2	5.7	4.0	80	6.1	52	4
*Togwotee Pass	9F1	9600	Feb. 1	72	20.8	23.9	20.4	20.9	18.4	113	28.7	73	17

*Adjacent Basin

MONTANA SNOW SURVEYS FEBRUARY 1, 1952

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches)								Years
					February 1 1952	Past Records 1951	1950	1949	Average Data Feb. 1 Avg.	%Avg.	Average on April 1 Avg.	%Avg.	
LOWER YELLOWSTONE (Cont'd)													
*Black Rock	10F3	8600	Feb. 1	58	16.0	18.5	18.4	15.7	14.1	113	21.6	74	17
(Popo Agie River)													
Blue Ridge	8G2	9500	Feb. 4	41	12.1	7.9	14.3	10.4	8.0	151	11.4	106	11
Grannier Meadows	8G4	9000	Feb. 4	53	13.0	10.3	16.2	--	9.3	140	12.3	106	10
Sawmill Glade	8G1	8500	Feb. 4	26	5.7	3.5	8.3	6.7	4.9	116	7.6	77	11
South Pass	8G3	9000	Feb. 4	49	14.3	11.2	15.5	9.8	8.9	151	13.9	103	11
BIG HORN RIVER (Wyoming)													
Beavers Mill	9F8	8000	Feb. 2	19	3.2	6.3	6.5	5.5	5.4	59	8.6	37	4
Owl Creek	8F1	8700	Feb. 3	18	4.3	4.0	4.8	4.2	4.6	94	6.7	64	4
Wood River	9E7	8000											
SHOSHONE RIVER													
East Entrance	10E6	7000	Feb. 1	39	11.0	9.4	8.6	10.7	9.6	115	14.6	75	3
Sylvan Pass	10E5	7100	Jan.31	44	12.2	11.4	12.1	10.9	10.8	112	14.3	85	9

*Adjacent Basin

MONTANA SNOW SURVEYS FEBRUARY 1, 1952

MISSOURI BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches) Feb. 1 1952	Past Records 1951	1950	1949	Average Data Feb. 1 Avg.	%Avg.	Average on April 1 Avg.	%Avg.	Years
TONGUE RIVER													
Burgess Junction	7E4	7900	Feb. 4	44	15.9	14.3	--	--	--	--	--	--	2
Big Goose	7E2	7700	Feb. 4	15	3.8	2.6	--	--	--	--	--	--	2
Dome Lake	7E5	8800	Feb. 4	29	7.2	3.8	--	--	4.7	152	6.6	109	3
POWDER RIVER													
Muddy Pass	7E7	9700											
Sour Dough	6F1	8500											
Soldier Park	7E6	8700	Feb. 4	25	4.8	3.7	--	--	--	--	--	--	2
North Powder	7E8	8500	Feb. 4	29	6.9	5.0	--	--	--	--	--	--	2
CHEYENNE RIVER (South Dakota)													
Upper Spearfish	#15 Dak.	6500	Feb. 1	28	7.1	2.6	2.0	8.7	3.4	208	6.6	108	9

MONTANA SNOW SURVEYS FEBRUARY 1, 1952

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches) Feb. 1 1952	Past Records 1951	1950	1949	Average Data Feb. 1 Avg.	%Avg.	Average on April 1 Avg.	%Avg.	Years
COLUMBIA RIVER													
KOOTENAI													
New Fernie	14A1	6800	Jan.29	45	12.3	10.4	--	--	11.4	--	--	--	2
Fernie Ridge	14A4	5000	Jan.29	63	18.6	--	--	--	New Course		--	--	1
Fernie	Canada	3500	Jan.30	30	8.9	7.6	11.7	6.8	6.0	112	7.8	89	13
Gray Creek	Canada	5100	Jan.30	49	12.6	13.5	12.5	12.1	12.7	99	21.8	59	4
Kimberley	Canada	3800	Jan.31	32	7.5	--	7.2	5.5	5.2	144	5.3	141	7
Marble Canyon	Canada	5000	Jan.30	46	10.0	19.9	12.9	7.9	11.9	84	15.0	68	5
Nelson Creek	Canada	3050	Jan.29	49	12.9	11.1	9.9	14.9	9.6	134	13.5	96	14
Sinclair Pass	Canada	4500	Jan.31	22	5.3	5.1	5.2	3.2	4.7	112	4.9	108	5
Sullivan Mine	Canada	5100	Feb. 1	53	12.7	8.4	11.5	9.0	9.6	132	16.2	78	7
FLATHEAD RIVER													
Desert Mountain	13A2	5600	Feb. 1	49	15.2	11.9	13.7	--	9.9	154	15.2	100	6
Marias Pass	13A5	5250	Jan.31	52	16.6	13.7	20.6	12.6	11.3	147	17.5	95	18
Coyote Hill		5500	Feb. 1	35	10.4	--	New Course						1
Rainy Lake	13B6	4300	Feb. 1	41	12.7	--	11.4	9.4	9.4	135	11.9	107	5
Snow Lab #13	13A9	5200											
Trout Lake	13B11	3600	Feb. 1	51	15.0	--	--	16.2	--	--	20.4	74	4
Twin Creeks	13B11	3580	Feb. 1	40	10.9	9.1	--	--	--	--	--	--	2
Quintonkon	13B13	3800	Feb. 1	51	15.4	12.6	--	--	--	--	--	--	2

MONTANA SNOW SURVEYS FEBRUARY 1, 1952

COLUMBIA BASIN DRAINAGE BASIN AND SNOW COURSE **	No.	Elev.	Date of Survey 1952	Snow Depth (In.) 1952	Water Content (Inches) Feb. 1 1952	Past Records 1951	1950	1949	Average Data Feb. 1 Avg.	%Avg.	Average on April 1 Avg.	%Avg.	Years
UPPER CLARK FORK													
Chessman Res.	12C5	6200	Feb. 2	17	4.6	3.1	3.4	4.4	3.1	148	4.6	100	17
Intergaard	13C4	6450	Feb. 1	24	6.7	6.2	4.7	5.6	4.9	136	8.3	81	8
Pipestone Pass	12D1	7200	Feb. 4	22	3.1	3.0	1.4	5.2	2.9	107	5.7	55	13
Rainy Lake	13B6	4200	Feb. 1	41	12.7	--	11.4	9.4	9.4	135	11.9	107	5
Stuart Mill	13C6	6500	Feb. 1	21	5.3	5.2	3.4	4.5	4.2	125	6.7	79	8
Picnic Grounds	13C6	6500	Feb. 1	19	4.3	4.7	2.1	3.9	3.1	142	4.2	105	8
Southern Cross	13C5	6500	Feb. 1	23	6.1	4.6	2.5	4.3	3.4	180	5.0	122	8
Tenmile, Lower	12C2	6250	Feb. 1	24	5.8	5.5	4.6	6.3	4.5	129	6.4	91	17
Tenmile, Middle	12C3	6800	Feb. 1	32	8.2	8.2	6.9	8.7	6.4	128	10.3	79	18
Tenmile, Upper	12C4	8000	Feb. 1	36	10.4	10.0	8.4	10.6	8.1	128	13.2	79	18
Lookout	15B2	5250	Feb. 1	104	32.4	27.3	30.9	28.2	21.4	151	33.0	98	16
BITTERROOT													
Gibbons Pass	13D2	7100	Jan.29	60	20.0	16.9	17.2	--	14.3	141	22.8	88	13
Moose Creek	13D16	6200	Jan.30	48	13.9	--	11.4	13.4	10.0	149	15.4	91	7

Federal - State - Private

COOPERATIVE SNOW SURVEYS

Furnishes the basic data
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"WATER IS THE WEST'S GREATEST RESOURCE"